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PENSOFT

Notes on the butterfly theridiid *Episinus marignaci* (Lessert, 1933) (Araneae, Theridiidae) from South Africa

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Abstract

We present the first records of the butterfly theridiid *Episinus marignaci* (Lessert, 1933) beyond its type locality, resulting in an extension of its geographic range from Angola to South Africa. Images of live specimens and a distribution map are provided. *Episinus marignaci* is rare locally but has a relatively large geographical distribution in South Africa.

Keywords

Angola, geographical distribution, South African National Survey of Arachnida

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Introduction

The genus *Episinus* Walckenaer, 1809 is represented by 66 species/subspecies with 10 species and one subspecies listed from Africa but only one species from South Africa (World Spider Catalog 2022). The South African *E. bilineatus* Simon, 1894 is categorized as Data Deficient, as the species was described based on a single juvenile specimen and the type locality was only given as Transvaal.

The *Episinus* specimens sampled during South African National Survey of Arachnida (SANSA) corresponded with the original description and images provided for *E. marignaci* (Lessert 1933) (Fig. 2A, C). The species was originally described as *Episinopsis marignaci* from Santo Amaro in Angola, but Levi and Levi (1962) regarded *Episinopsis* Simon, 1894 to be a synonym of *Episinus*.

Episinus marignaci is commonly known as butterfly spiders. It is a very colourful spider and has been sampled from several localities in South Africa. For the first time, images of live specimens are provided with notes on their behaviour, distribution, and conservation status in South Africa.

Methods

Extensive surveys were undertaken throughout the country during the South African National Survey of Arachnida (SANSA) and large numbers of theridiid specimens were sampled (Dippenaar-Schoeman et al. 2015). Requests for photographs for the SANSA Virtual Museum were also made (Dippenaar-Schoeman et al. 2012), and images of *E. marignaci* were received from

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two localities in South Africa. The digital image of the epigyne was taken using the built-in camera of a Leica EZ4D microscope. Species-level determinations were done using Levi and Levi (1962). Voucher specimens of specimens collected are housed in the National Collection of Arachnida (NCA) at the Agricultural Research Council in Pretoria.

Results

Episinus marignaci (Lessert, 1933)

Episinopsis marignaci Lessert 1933: 103, figs. 17–19 (female).
Episinus marignaci—Dippenaar-Schoeman et al. 2013: 121; Dippenaar-Schoeman 2014: 144.

Figures 1, 2

Type locality. Angola, Santo Amaro.

New records. SOUTH AFRICA – **Eastern Cape** • Kei River Mouth; 32.68°S, 028.37°E; 3.III.2007; C. Haddad leg.; 1♀, NCA 2007/1425 • Addo Elephant National Park, Woody Cape; 33.88°S, 025.45°E; 2.II.2013; L. Wiese leg.; 1♀, NCA 2013/1109 • Addo Elephant National Park, Zuurberg; 33.20°S, 025.75°E; L. Wiese leg.; 1♀, NCA 2016/1796 – **KwaZulu-Natal** • iSimangaliso WP, uMkhuze Game Reserve; 27.63°S, 032.25°E; 5.II.2004; X. Combrink leg.; 1♀, NCA 2004/496 • Ndumo Game Reserve; 26.87°S, 032.24°E; 2.X.2004; C. Haddad leg.; 1♀, NCA 2004/919 • Umgeni Valley Nature Reserve; 29.29°S, 030.15°E; 5.x.2010; A.S. Dippenaar leg.; 1♀, NCA 2010/826 • Alverstone near Hillcrest; 29.77°S, 030.73°E; 28.XII.2016; Peter Webb leg.; 1♀, photographs – **Limpopo** • Blouberg Nature Reserve; 22.99°S, 029.04°E; 13.ii.2009; S. Foord leg.; 1♀, NCA 2009/2047 • Little Leigh, Western Soutpansberg; 22.9°S, 029.87°E; 5.III.2009; S. Foord leg.; 1♀, NCA 2009/2403 • Nylsvley Nature Reserve; 24.6°S, 028.67°E; 7.iii.1987; G. Ferriera leg.; 1♀, NCA 87/279 • Potgietersrus/Mokopane; 24.17°S, 028.09°E; 15.iv.2005; A.S. Dippenaar leg.; 1♀, NCA 2005/1051 • Mphaphuli Cycad Reserve; 22.42°S, 030.49°E; 18.III.2016; P. Webb leg.; 1♀, NCA 2016/3578 & photographs.

Identification. Total length of female 3–6 mm. Carapace slightly longer than wide; fawn with two dark, V-shaped longitudinal bands; eye region elevated projecting anteriorly (Fig. 1A, B); with a pair of tubercles between anterior and posterior median eyes; anterior eye row slightly recurved; posterior row straight or slightly recurved as seen from above; median eyes closer to laterals than to each other; clypeus low and flat, usually projecting anteriorly; fovea distinct and long. Abdomen reddish brown (Fig. 1D) with distinct triangular pattern dorsally (Fig. 1A–D); dorsal triangle consists of a yellow area bordered by thin reddish band (Fig. 1B); second smaller pink triangle on the yellow triangle, sometimes with yellow transverse bands. Leg formula 1423; legs II and III, same colour as carapace; legs I and IV brown, with dusky flecks and marks or bands. Epigyne with more or less semicircular openings in a depression with a pair of seminal receptacles present posteriorly (Fig. 2A, B). Specimens lose their colour in alcohol (Fig. 2D).

Figure 1. Female of *Episinus marignaci* from Mphaphuli Cycad Reserve. **A, B.** Dorsal view. **C, D.** Dorsolateral and lateral views. Photographs: Peter Webb.

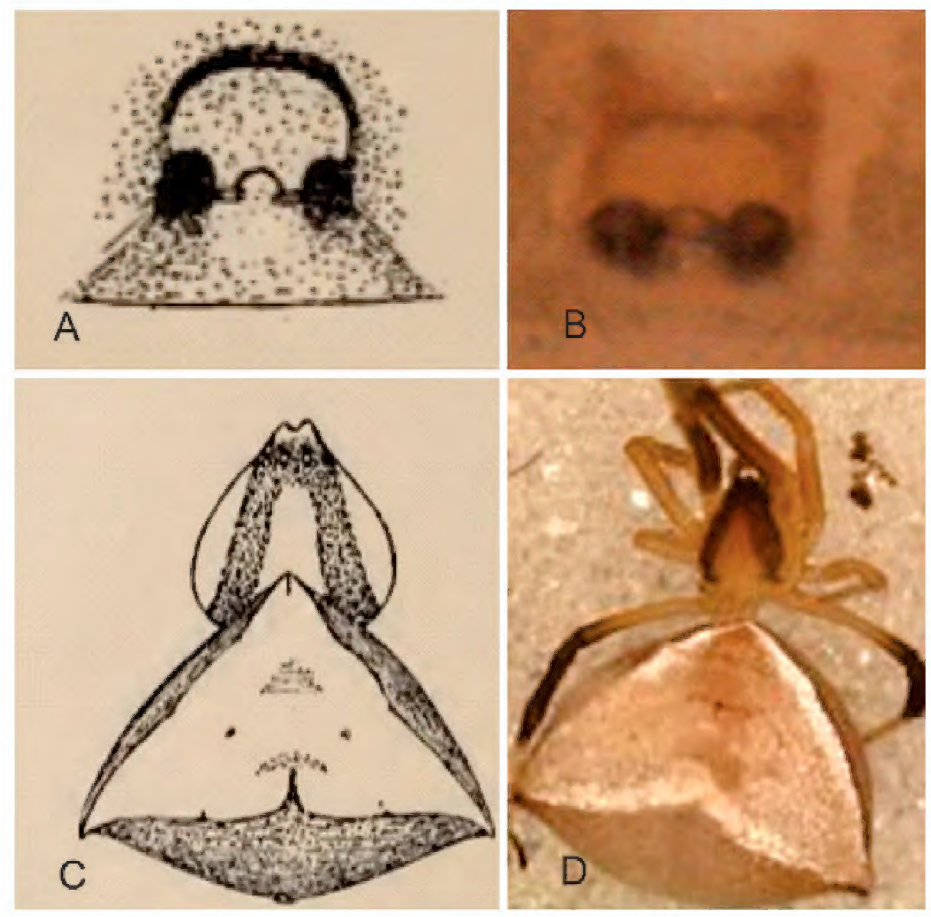

Figure 2. Female of *Episinus marignaci*. **A, B.** Epigyne, ventral view. **C, D.** Habitus, dorsal view. A and C reproduced after Lessert (1933).

Habitat. *Episinus marignaci* has been sampled from vegetation using a sweep net or by hand in the Savanna (Foord et al. 2011, 2019), Indian Ocean Coastal Belt, and Thicket biomes (Dippenaar-Schoeman et al. 2020; Fig. 3).

Behaviour. Little is known about the behaviour of this species. According to (Eberhard 1981), members of *Episinus* have been found at ground level between low vegetation and construct very simple H- or Y-shaped webs. In a study of the web of *E. angulatus* (Blackwall, 1836), Holm (1939) found that immature spiders in captivity construct a simple web to catch insects. The spiders sit between two threads. The lower portions of the two threads below the spider are viscid silk and breaks easily. Any insect caught by the strands breaks the thread and

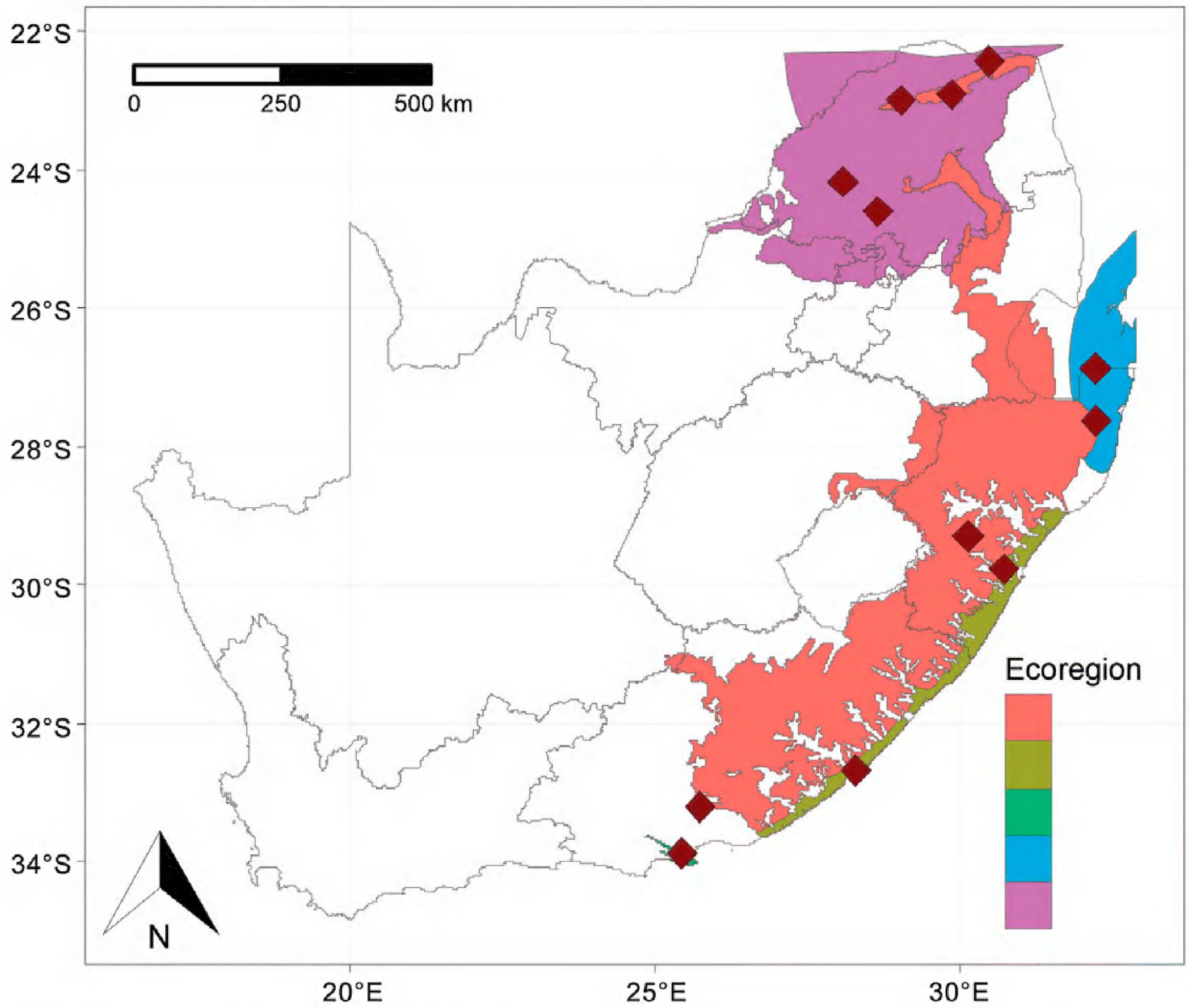

Figure 3. Distribution map of *Episinis marignaci* in South Africa. Ecoregions (Olson et al. 2001) where they occur: Drakensberg montane grasslands, woodlands, and forests, Kwa-Zulu Cape coastal forest mosaic, Lowland Fynbos and renosterveld, Maputaland forest mosaic, Southern African bushveld.

is pulled up and bitten by the spider. When disturbed, the spiders stretched their legs parallel to the body, and on further disturbance would fall to the ground. According to Archer (1946), *E. amoenus* Banks, 1911 preys on ants and lives on evergreen shrubs or in leaf litter in forest areas. Individuals hang with outstretched front legs, like *Tetragnatha* Latreille, 1804, underneath horizontal threads in low shrubs. *Episinus marignac* seems to be nocturnal and during the day they were found on leaves (Fig. 2D).

Discussion

Due to the wide geographical range, the species is listed as Least Concern. There are no significant threats to this species, and it is protected in the Ndumo Game Reserve (Haddad et al. 2006), Nylsvley Nature Reserve (Dippenaar-Schoeman and Prendini 2009), Addo Elephant National Park (Dippenaar-Schoeman et al. 2020), Blouberg Nature Reserve (Foord et al. 2019), uMkhuze Game Reserve, and Umgeni Valley Nature Reserve.

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Authors' Contributions

Conceptualzation: ASDS. Data Curation: ASDS. Investigation: ASDS, SHF. Visualization: SHF. Writing – original draft: ASDS. Writing – review and editing: SHF.

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